

## REMARKS/ARGUMENTS

This Response is being submitted within three months of the shortened statutory period for responding to the Office Action made on January 29, 2004. Therefore, no Petition and Fee for Extension of Time are filed with this Response.

Hereinafter the Claims that are pending prior to the entry of the Amendment in this Response are called "Current Pending Claims." This Response amends Currently Pending Claims 1-3, 13, 24-27, 30-32, 35-36, 41-42 and 44-45. Please add new Claim 47. No Claims are canceled with this Response. Upon Amendment, the above-identified U.S. Patent Application will have three Independent Claims (Currently Amended Claim 1 and Currently Pending Claims 17 and 33) and 46 total Claims (Currently Pending Claims 4-12, 28, 33-34, 37-40 and 43, Currently Amended Claims 1-3, 13, 24-27, 30-32, 35-36, 41-42 and 44-45, and New Claim 47). The applicants previously paid for up to 4 Independent Claims and 46 total Claims. Therefore, no fee is due for excess Claims with this Response.

### 1. Specification

Applicants submit an Amended Abstract. It is believed that the objection under 35 U.S.C. 132 is met by the amendment.

### 2. Support for New Claim 47

Support for New Claim 47 can be found, in inter alia, the original filed application on page 5, lines 25-31.

### 3. Claim Rejections – 35 U.S.C. §112, First Paragraph

The Examiner rejects Currently Pending Claims 1-16, 31, 41-43, 44-46 under 35 U.S.C. §112, first paragraph, in item 3 on page 2 of the Office Action because the specification

does not have support for *multiple* support layer. The Applicants submit Currently Amended Claims 1, 41 and 44, which should overcome this rejection.

4. Claim Rejections – 35 U.S.C. §112, Second Paragraph

The Examiner rejects Currently Pending Claims 2-3, 13, 31, 42, 45 under 35 USC §112, second paragraph, in item 4 on page 3 of the Office Action as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants submit Currently Amended Claims 2-3, 13, 31, 42, 45. It is believed that this rejection is overcome by the Currently Amended Claims.

5. Claim Objections because of Informalities

The Examiner objects Currently Pending Claims 24-28, 30, 32-36 for some informalities, in item 5 on page 3 of the Office Action. Applicants submit Currently Amended Claims 24-27, 30, 32, and 35-36. It is believed that the objection of those Claims is met by the Currently Amended Claims.

6. Allowable Subject Matter

The Examiner set forth in item 8 on page 5 of the Office Action that Claims 17-23, 37-40 are allowable over the prior art of record. The Examiner indicated that Claims 24-28, 30, 32-36 would be allowable if rewritten to overcome the objections to the Claims.

Applicants respectfully submit that the Claims are amended to overcome the objection as discussed in the preceding section. Applicants therefore submit that Claims 17-23, 24-28, 30, 32-36, 37-40 are now allowable.

Applicants respectfully submit that the Examiner rejected Claims 1-16, 31, 32, 41-46. However, the Examiner only rejects Claims 2-3, 6-7, 11, 13, 15-16, 31, 41-46 under 35 U.S.C. §112, first paragraph and Claims 2-3, 13, 31, 42, 45 under 35 USC §112, second paragraph. It is therefore strongly believed that Claims 2-3, 6-7, 11, 13, 15-16, 31, 41-46 are allowable since the rejections under 35 USC §112, first and second paragraph are

overcome and the Examiner did not reject Claims 2-3, 6-7, 11, 13, 15-16, 31, 41-46 for other grounds.

7. Claim Rejections – 35 U.S.C. §103

The Examiner rejects Currently Pending Claims 1, 4-5, 8-10, 12, 14, 32 under 35 U.S.C. §103(a) as being allegedly unpatentable over U.S. Patent No. 6,491,880 (hereinafter called "Wang 880") or over U.S. Patent No. 6,558,634 (hereinafter called "Wang 634").

A. Applicants respectfully submit that Wang 880 and Wang 634 are both Continuation in part of application No. 09/375,610, filed on August 17, 1999, now Patent No. 6,451,864. Wang 880 and Wang 634 both disclose the same parts the Examiner relies on.

B. The Currently Amended Independent Claim 1 has the following limitations:

A multi-component composite membrane comprising active layers and support layers, wherein a support layer is located between active layers, wherein the active layers have pores having a pore size and a pore distribution, and wherein the support layer has pores having a different pore size and a different pore distribution.

Currently Pending Claims 4-5, 8-10, 12, 14, and Currently Amended Claim 32 and New Claim 47 are directly dependent from Claim 1.

C. Re: Wang 880

Wang 880 teaches:

"… a method of making a Fischer-Tropsch catalyst having the steps of: providing a

catalyst structure comprising a porous support with a first pore surface area and a first pore size of at least about 0.1  $\mu\text{m}$ ; optionally depositing a buffer layer on the porous support; depositing a porous interfacial layer with a second pore surface area and a second pore size less than said first pore size, upon the buffer layer (if present); and depositing a Fischer-Tropsch catalyst upon the second pore surface area."

D. *Prima Facia* Case of Obviousness

Applicants respectfully submit that to establish a *prima facia* case of obviousness, three criteria must be met.

- First, there must be some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings.
- Second, there must be a reasonable expectation of success.
- Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2142.

Further the teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, therefore, in the combined reference teaching and not Applicants' disclosure.

The mere fact that references can be modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination (MPEP 2143.01).

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure (MPEP 2143).

A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. An obviousness analysis requires that the prior art both suggest the claimed subject matter and reveal a reasonable expectation of success to one reasonably skilled in the art.

With this as a background, applicants analyzed the prior art Wang 880 and Wang 634 as applied by the Examiner in the rejection of Currently Pending Independent Claim 1 in the Office Action. Applicants submit that Currently Amended Claim 1 is non-obvious in view of Wang 880 and Wang 634 (Wang) for the reasons set forth below.

- a) Wang teaches a method of making a Fischer-Tropsch catalyst. Wang does not teach or suggest a method to prepare a membrane at all. For this reason Wang does not teach or suggest all the claim limitations of Claim 1.
- b) Wang teaches a catalyst structure comprising a
  - porous support with a first pore surface area and a first pore size of at least about 0.1  $\mu\text{m}$ .
  - A buffer layer may or may not be deposited on the porous support.
  - A porous interfacial layer with a second pore surface area and a second pore size less than said first pore size, is deposited upon the buffer layer if present. If a buffer layer is not present than a porous interfacial layer is deposited on the porous support layer.
  - A Fischer-Tropsch catalyst is deposited upon the second pore surface area.Wang does not teach or suggest "a multi-component composite membrane comprising active layers and support layers, wherein a support layer is located between active layers" as recited by Currently Amended Claim 1.

Wang does not teach or suggest to modify the teaching of Wang and to arrive at the invention as claimed in Currently Amended Claim 1. There is no suggestion or motivation in the references itself to modify the reference teaching and to make a multi-component composite membrane comprising active layers and support layers, wherein

a support layer is located between active layers as claimed in Currently Amended Claim 1.

The Examiner does not refer to anything in the cited reference that would motivate someone with ordinary skill in the art to modify the cited reference to produce the Applicants claimed invention. Instead, the Examiner simply asserts that it would have been obvious to someone with ordinary skill in the art to apply an active material to a support with different porosity characteristics in order to improve reaction efficiency.

Applicants respectfully traverse the Examiner's assertion because it is not obvious to make a multi-component composite membrane comprising active layers and support layers, wherein a support layer is located between the active layers as claimed in Currently Amended Claim 1. Improving reaction efficiency makes sense if one is using a catalyst. But, in Wang, catalyst is exposed as shown in Fig. 2. How would applying an active material to Wang's support 100 possibly improve the catalytic reaction of layer 106? It is submitted that there is no motivation from the cited art to place an active layer on Wang's support layer 100.

Applicants respectfully submit that Wang teaches in a different technical field of technology. The technology of Wang has nothing in common with a multi-component composite membrane comprising active layers and support layers, wherein a support layer is located between active layers as claimed in Currently Amended Claim 1. Further, the problem to be solved according to Wang is different.

Applicants respectfully remind the Examiner about the three criteria for establishing a *prima facie* case of obviousness. Taken the three criteria as a basis, the teaching of Wang is improper in this case to establish a *prima facie* case of obviousness. Wang does not teach or suggest all the claim limitations. There is no suggestion or motivation in Wang or in the knowledge generally available to one of ordinary skill in the art, to modify the Wang teaching. There is no reasonable expectation of success. The only motivation or suggestion to modify Wang is based upon the Applicants' own disclosure.

Applicants finally submit that in making the assessment of differences, 35 U.S.C § 103 specifically requires consideration of the claimed invention “as a whole.” The “as a whole” instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts, then find a prior art reference containing one part, another containing another part, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result – often the very definition of invention. In present case, the new invention is claimed in Currently Amended Independent Claim 1.

35 U.S.C. § 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a whole. The assurance of an “as a whole” assessment of the invention under 35 U.S.C. § 103 requires a showing that a person of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner.

The Examiner fails to show some suggestion or motivation, before the invention itself, to make the new invention is claimed in Currently Amended Independent Claim 1. The examiner did not find a motivation to combine prior art references in the nature of the problem to be solved.

Applicants finally submit that since the Currently Amended Independent Claim 1 is non-obvious under 35 U.S.C. § 103, then any Claim depending therefrom is non-obvious (MPEP 2143.03). Therefore, dependent Claims 4-5, 8-10, 12, 14, 32 and 47 are non-obvious at the very least because they are each directly dependent on an allowable base Claim 1 as well.

If the Examiner rejects Currently Amended Claims 1 and 32 and Currently Pending Claims 4-5, 8-10, 12, 14 and new Claim 47 on the same prior art grounds, the Applicants

respectfully request that the Examiner show how the references teach or suggest every element of the rejected Claims.

E. Accordingly, reconsideration and examination of the present application is respectfully requested.

The application is now in condition for allowance. Allowance of the application at an early date is respectfully requested.

The Applicants reserve the right to seek protection for any unclaimed subject matter either subsequently in the prosecution of the present case or in a divisional or continuation application.

This Response amends Currently Pending Claims 1-3, 13, 24-27, 30-32, 35-36, 41-42 and 44 and adds New Claim 47. The amendments and additions that are described in the preceding sentence were done to more fully claim the invention and/or to improve the wording of the Claims and were not done to overcome rejections under 35 U.S.C. 112, to overcome the prior art or to overcome any other rejections or objections. The amendments and additions that are described in the first sentence of this paragraph

shall not be considered necessary to overcome the prior art, shall not be considered necessary to overcome rejections under 35 U.S.C. § 112, and shall not be considered necessary to overcome any other rejections or objections.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this Response is not timely filed, then the Commissioner is authorized to treat this Response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this Response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

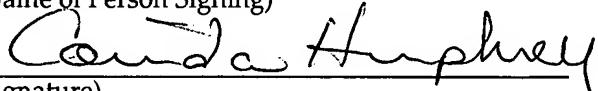
I hereby certify that this correspondence is being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on

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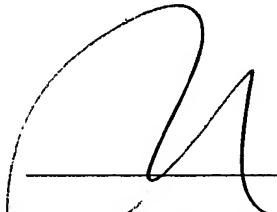


(Signature)

April 29, 2004

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Respectfully submitted,



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